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10/725,459	12/03/2003	Masaki Shiraishi	0229-0785P	4041

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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
PRETLOW, DEMETRIUS R	
ART UNIT	**PAPER NUMBER**
2863	

NOTIFICATION DATE	DELIVERY MODE
05/30/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/725,459	SHIRAISHI, MASAKI	
	Examiner	Art Unit	
	Demetrius R. Pretlow	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-12 and 14-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-12,14-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 8 is objected to because of the following informalities:

In claim 8, line 18, it appears that --at-- should be inserted between "is" and "each" .

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3 and 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwajima et al. (US 6,692,089) in view of Meyer (US 6,038,933) . In reference to claim 1, Kuwajima et al. teach obtaining data on a relationship between the force exerted on the vehicle wheel and a physical parameter of the vehicle wheel at at least one predetermined measuring position. Note column 5, lines 60-64. Kuwajima et al. does not explcitly teach making deriving a formula that calculates the physical parameter in terms of the magnitude of the force exerted on the vehicle wheel, using the obtained data on the relationship, however this would be inherent to the ecu which calculates slip

ratio. Note column 9, lines 42-23. Kuwajima et al. teach measuring the physical parameter of the vehicle wheel during rolling. Note Kuwajima et al. column 6, lines 31-33. Kuwajima et al. teach computing the formula (inherent) using the measured physical parameter to calculate the force (slip ratio) Note column 9, lines ; and Kuwajima et al. teach outputting the calculated force. Note column 9, lines 50-57.

Kuwajima et al. does not teach the physical parameter is the magnitude of a radial strain in the radius part.

Meyer (US 6,038,933) teach physical parameter is the magnitude of a radial strain in the radius part. Note Meyer column 3, lines 18-24.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Kuwajima et al. to include the teaching of Meyer because it would allow force and moment to be measured in plural directions. Note column 1, lines 50-51.

In reference to claim 2, Kuwajima et al. teach wherein the force is torque. Note Figure 6.

In reference to claim 3, Kuwajima et al. teach the radially outermost annular ground contacting part is a tire (Note column 2, lines 55-56), and the radius part is a wheel disk of a wheel on which the tire is mounted (inherent to the wheel of Kuwajima et al.).

In reference to claim 5, Kuwajima et al. does not teach said at least one predetermined measuring position is a twelve-o'clock position (P3), three-o'clock

position (P4), six-o'clock position (P 1) and nine-o'clock position (P2) which are arranged at every 90 degrees around the rotational axis of the vehicle wheel.

Meyer et al. teach said at least one predetermined measuring position is a twelve-o'clock position (P3), three-o'clock position (P4), six-o'clock position (P 1) and nine-o'clock position (P2) which are arranged at every 90 degrees around the rotational axis of the vehicle wheel. Note Meyer column 3, lines 28-29 and Figure 1, sensor 44.

Claims 6,-8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwajima et al. (US 6,692,089) in view of Landsness (4,171,641). In reference to claim 6, Kuwajima et al. teach obtaining data on a relationship between the force exerted on the vehicle wheel and a physical parameter of the vehicle wheel at at least one predetermined measuring position. Note column 5, lines 60-64. Kuwajima et al. does not explcitly teach making deriving a formula that calculates the physical parameter in terms of the magnitude of the force exerted on the vehicle wheel, using the obtained data on the relationship, however this would be inherent to the ecu which calculates slip ratio. Note column 9, lines 42-23. Kuwajima et al. teach measuring the physical parameter of the vehicle wheel during rolling. Note Kuwajima et al. column 6, lines 31-33. Kuwajima et al. teach computing the formula (inherent) using the measured physical parameter to calculate the force (slip ratio) Note column 9, lines ; and Kuwajima et al. teach outputting the calculated force. Note column 9, lines 50-57.

Kuwajima et al. does not teach the measuring of the physical parameter includes: locating a sensor for the physical parameter which is fixed to the radius part; and the measuring of the physical parameter includes: locating a sensor for the physical

parameter which is fixed to the radius part; and reading the sensor when the sensor is at said at least one predetermined measuring position

Landsness teach the measuring of the physical parameter includes: locating a sensor for the physical parameter which is fixed to the radius part; and the measuring of the physical parameter includes: locating a sensor for the physical parameter which is fixed to the radius part; Note column 2, lines 49-68. and Landsness teach reading the sensor when the sensor is at said at least one predetermined measuring position (inherent). Note column 2, lines 49-68.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Kuwajima et al. to include the teaching of Landsness because it would correct for imbalance forces. Note Landsness column 1, line 49-50.

In reference to claim 16, Kuwajima et al. does not teach wherein said physical parameter is the magnitude of radial strain on the radius part of the vehicle wheel.

Landsness teach wherein said physical parameter is the magnitude of radial strain on the radius part of the vehicle wheel. Note Landsness column 2, lines 61-68.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Kuwajima et al. to include the teaching of Landsness because it would correct for imbalance forces. Note Landsness column 1, line 49-50.

In reference to claim 7, Kuwajima et al. teach obtaining data on a relationship between the force exerted on the vehicle wheel and a physical parameter of the vehicle wheel at at least one predetermined measuring position. Note column 5, lines 60-64. Kuwajima et al. does not explcitly teach making deriving a formula that calculates the physical parameter in terms of the magnitude of the force exerted on the vehicle wheel, using the obtained data on the relationship, however this would be inherent to the ecu which calculates slip ratio. Note column 9, lines 42-23. Kuwajima et al. teach measuring the physical parameter of the vehicle wheel during rolling. Note Kuwajima et al. column 6, lines 31-33. Kuwajima et al. teach computing the formula (inherent) using the measured physical parameter to calculate the force (slip ratio) Note column 9, lines ; and Kuwajima et al. teach outputting the calculated force. Note column 9, lines 50-57.

Kuwajima et al. does not teach the measuring of the physical parameter includes: locating a sensor for the physical parameter which is fixed to the radius part; and the measuring of the physical parameter includes: locating a plurality of sensors for the physical parameter which is fixed to the radius part; and reading each said sensor when the sensor is at at least one predetermined measuring position

Landsness teach the measuring of the physical parameter includes: locating a sensor for the physical parameter which is fixed to the radius part; and the measuring of the physical parameter includes: locating a plurality of sensors for the physical parameter which is fixed to the radius part; Note column 2, lines 49-68. and Landsness teach reading each said sensor when the sensor is at said at least one predetermined measuring position (inherent). Note column 2, lines 49-68.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Kuwajima et al. to include the teaching of Landsness because it would correct for imbalance forces. Note Landsness column 1, line 49-50.

In reference to claim 8, Kuwajima et al. teach obtaining data on a relationship between the force exerted on the vehicle wheel and a physical parameter of the vehicle wheel at at least one predetermined measuring position. Note column 5, lines 60-64. Kuwajima et al. does not explcitly teach making deriving a formula that calculates the physical parameter in terms of the magnitude of the force exerted on the vehicle wheel, using the obtained data on the relationship, however this would be inherent to the ecu which calculates slip ratio. Note column 9, lines 42-23. Kuwajima et al. teach measuring the physical parameter of the vehicle wheel during rolling. Note Kuwajima et al. column 6, lines 31-33. Kuwajima et al. teach computing the formula (inherent) using the measured physical parameter to calculate the force (slip ratio) Note column 9, lines ; and Kuwajima et al. teach outputting the calculated force. Note column 9, lines 50-57.

Kuwajima et al. does not teach the measuring of the physical parameter includes: locating a sensor for the physical parameter which is fixed to the radius part; and the measuring of the physical parameter includes: locating a plurality of sensors for the physical parameter which is fixed to the radius part; and reading each said sensor when the sensor is at each of the predetermined measuring position

Landsness teach the measuring of the physical parameter includes: locating a plurality of sensors for the physical parameter which is fixed to the radius part; and the measuring of the physical parameter includes: locating a sensor for the physical parameter which is fixed to the radius part; Note column 2, lines 49-68. and Landsness teach reading each said sensor when the sensor is at each of the predetermined measuring position (inherent). Note column 2, lines 49-68.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Kuwajima et al. to include the teaching of Landsness because it would correct for imbalance forces. Note Landsness column 1, line 49-50.

Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer (US 6,038,933) in view of Landsness (4,171,641). Meyer teach at least one sensor for measuring a physical parameter of the vehicle wheel during rolling, said at least one sensor being attached to the radius part. Note column 3, lines 18-24. Meyer does not explicitly teach a memory in which a formula that calculates the physical parameter in terms of the force exerted on the vehicle wheel at at least one predetermined measuring position is stored, however this would be inherent to the controller (82). Note column 6, lines 50-54. Meyer et al. teach a processor (82) which, using data on the physical parameter read from said at least one sensor, computes the formula (inherent) to calculate the force and output data on the force. Note column 6, lines 50-54.

Meyer does not teach a device for locating said at least one sensor in order to measure the physical parameter when the sensor is at the predetermined measuring position.

Landsness teach a device (encoder 37) for locating said at least one sensor in order to measure the physical parameter when the sensor is at the predetermined measuring position. Note column 2, lines 50-53.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Meyer to include the teaching of Landsness because it would correct for imbalance forces. Note Landsness column 1, line 49-50.

In reference to claim 10, Meyer teach said physical parameter is the magnitude of radial strain on the radius part of the vehicle wheel. Note column 3, lines 18-24.

In reference to claim 11, Meyer teach said at least one sensor is one sensor fixed to the radius part of the vehicle wheel. Note column 3, lines 18-24.

In reference to claim 12, Meyer teach said at least one sensor is a plurality of sensors arranged around the rotational axis of the vehicle wheel and fixed to the radius part of the vehicle wheel. Note claim 5.

In reference to claim 13, Meyer teach wherein said force is at least one of a vertical force. Note column 5, line 62.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer (US6,038,933) in view of Landsness (US 4,171,641), and further in view of Kuwajima et al. (US 6,692,089). Meyer teach the limitations above.

Meyer does not teach the device according to claim 9 to determine a breaking force during braking, a braking mechanism for the vehicle wheel; and a controller for controlling the braking mechanism so that the breaking force becomes a maximum during braking

Kuwajima et al. teach the device according to claim 9 to determine a braking force during braking, a braking mechanism (18) for the vehicle wheel; and a controller (10) for controlling the braking mechanism so that the breaking force becomes a maximum during braking. Note column 6, lines 18-24 and Note column 10, lines 25-33.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Meyer to include the teaching of Kuwajima et al. because it would reduce a time lag before the control starts to reduce a braking distance. Note Kuwajima et al. column 2, lines 49-50.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Demetrius R. Pretlow whose telephone number is (571) 272-2278. The examiner can normally be reached on Mon.-Fri. 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Demetrius R. Pretlow 5/18/07

Patent Examiner

HAL WACHSMAN
PRIMARY EXAMINER
AU 2857